

FORM PTO-1390
(REV. 1-98)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

092/00810 (23537-15)

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/529792

INTERNATIONAL APPLICATION NO.
PCT/IL99/00055INTERNATIONAL FILING DATE
28 January 1999 (28.01.99)PRIORITY DATE CLAIMED
30 January 1998 (30.01.1998)

TITLE OF INVENTION

WWW ADDRESSING

APPLICANT(S) FOR DO/EO/US

REFUAH, Aviv, DAYAGI, Gil, ROTH, Roby

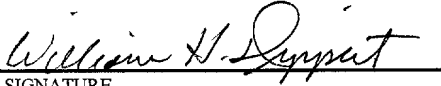
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a FIRST submission of items concerning a filing under 35 U.S.C. 371
2. ☐ This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1)
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ has been transmitted by the International Bureau
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2))
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3))
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)) UNexecuted
10. ☐ A translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 16. below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98
12. ☐ An assignment document for recording A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included
13. ☒ A FIRST preliminary amendment
☐ A SECOND or SUBSEQUENT preliminary amendment
14. ☐ A substitute specification
15. ☐ A change of power of attorney and/or address letter
16. ☒ Other items or information:

- International Search Report

U.S. APPLICATION NO. (if known) 09/529792		INTERNATIONAL APPLICATION NO. PCT/IL99/00055		ATTORNEY'S DOCKET NUMBER 092/00810 (23537-15)	
17. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1070.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$930.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$790.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$720.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$98.00 ENTER APPROPRIATE BASIC FEE AMOUNT =				CALCULATIONS PTO USE ONLY	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e))					
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$	
Total claims	20 - 20 =	0	x \$22.00	\$ -0-	
Independent claims	3 - 3 =	0	x \$82.00	\$ -0-	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			0 + \$270.00	\$ -0-	
TOTAL OF ABOVE CALCULATIONS =				\$ 840.00	
Reduction of 1/2 for filing by small entity, if applicable A Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28)				+	
SUBTOTAL =				\$ 840.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+	
TOTAL NATIONAL FEE =				\$ 840.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)) The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) \$40.00 per property				+	
TOTAL FEES ENCLOSED =				\$ 840.00	
				Amount to be refunded:	\$
				charged:	\$
a. <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed b. <input checked="" type="checkbox"/> Please charge <input checked="" type="checkbox"/> Deposit Account No <u>03-3419</u> in the amount of \$ <u>840.00</u> to cover the above fees A duplicate copy of this sheet is enclosed c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No <u>03-3419</u> A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status					
SEND ALL CORRESPONDENCE TO:					
William H. Dippert Cowan Liebowitz & Latman, P.C. 1133 Avenue of the Americas New York, NY 10036-6799			 SIGNATURE William H. Dippert NAME 26,723 REGISTRATION NUMBER		

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) AND 1.27 (c)) - SMALL BUSINESS CONCERN			Docket No. 193/01621
Serial No. 09/529,792	Filing Date April 18, 2000	Patent No.	Issue Date
Applicant/ Patentee: Aviv REFUAH et al.			
Invention: WWW ADDRESSING			
<p>I hereby declare that I am:</p> <p><input type="checkbox"/> the owner of the small business concern identified below:</p> <p><input checked="" type="checkbox"/> an official of the small business concern empowered to act on behalf of the concern identified below:</p> <p>NAME OF CONCERN: NET-EXPRESS LTD.</p> <p>ADDRESS OF CONCERN: P.O. BOX 211, TEL-AVIV 61001, ISRAEL</p> <p>I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 37 CFR 1.9(f), and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.</p> <p>I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the above identified invention described in:</p> <p><input type="checkbox"/> the specification filed herewith with title as listed above.</p> <p><input checked="" type="checkbox"/> the application identified above.</p> <p><input type="checkbox"/> the patent identified above.</p> <p>If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed on the next page and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 CFR 1.9(c) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).</p>			

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ no such person, concern or organization exists.
☐ each such person, concern or organization is listed below.

FULL NAME _____
 ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____
 ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____
 ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____
 ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: SHLOMO GRADMAN

TITLE OF PERSON SIGNING _____

OTHER THAN OWNER: CEO

ADDRESS OF PERSON SIGNING: C/O NET-EXPRESS LTD., P.O. BOX 211, TEL-AVIV 61001, ISRAEL

SIGNATURE: Shlomo Gradman DATE: 19/7/2000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Aviv REFUAH, et al.

Serial No.: to be assigned

Filed: to be assigned

For: WWW ADDRESSING

April 18, 2000

BOX PATENT APPLICATION (EO/DO/US)
Assistant Commissioner for Patents
Washington, D.C. 20231

FIRST PRELIMINARY AMENDMENT

S I R :

Prior to calculation of the filing fee, please amend the above application (a National Phase filing of International Application No. PCT/IL99/00055) as follows:

IN THE CLAIMS:

Cancel Claim 4 without prejudice.

Claim 5, line 1, change "claims 2-4" to -- claim 2 --.

Claim 6, line 1, change "claims 1-5" to -- claim 1 --.

Claim 7, line 1, change "claims 1-6" to -- claim 1 --.

Line 1 of each of Claims 8-10, change "claims 1-7" to -- claim 1 --.

Claim 13, line 1, change "claims 1-12" to -- claim 1 --.

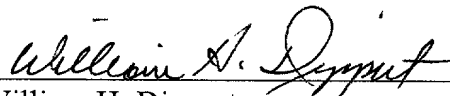
Claim 16, line 1, change "claims 13-15" to -- claim 13 --.

Line 1 of each of claims 17 and 18, change "claims 13-16" to -- claim 13 --.

Claim 20, line 1, change "claims 13-19" to -- claim 13 --.

Cancel Claims 22 to 85 without prejudice.

Respectfully submitted,


William H. Dippert
Reg. No. 26,723

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002660-2626360

WWW ADDRESSING 422 Rec'd PCT/PTO 1 8 APR 2000**FIELD OF THE INVENTION**

The present invention relates to world wide web page retrieval and, in particular, to methods and apparatus for performing such retrieval using a minimally restrictive syntax.

5

BACKGROUND OF THE INVENTION

The World Wide Web (WWW) is a set of protocols that allow a user to download and upload pages of information between his computer and other computers, typically using a program called a browser. The usual mode of operation includes opening a browser, entering a URL (Uniform Resource Locator), and viewing the page fetched by the browser. The actual
10 pages of information are located on physical host machines, each of which may be mapped to one or more domain names. Typically each domain is served by one host machine.

URL syntax is described in RFC 1630 ("Uniform Resource Identifiers in WWW"). The URL syntax relies heavily on the domain name space, as defined in RFCs 1034 ("Domain Names - Concepts and Facilities"), 1035 ("Domain Names Implementation and Specification")
15 and 883 (Domain names - Implementation and Specification").

A network resource (host) is identified in the domain name space by a string containing 1 or more labels (each up to a maximum of 63 characters), separated by periods. The periods are intended to define and outline the hierarchical structure of domain name space. Although RFC 1034 permits the use of 8-bit binary encoding, it is suggested that applications use 7 bit
20 ASCII for naming. Further, the suggested and currently implemented (de facto) naming scheme uses labels consisting only of alphanumeric characters from the Latin (ISO Latin 1) Character set plus the hyphen character. A valid name must start with a letter and the rest of the name should contain only letters, digits or hyphens.

Thus, the naming conventions for domains (and consequently sites and URLs) are
25 rather restricted. Typically, there is an attempt to identify a particular site with a particular site owner, so that the address is meaningful. For example, IBM has a web site with the address "http://www.ibm.com" (".com" indicates commercial), Microsoft has the address "http://www.microsoft.com" but Microsoft Network has the address of "http://www.msn.com". The restrictions make it easy to create a one-to-one mapping between web addresses and a
30 particular site. However, these addresses must be entered accurately. Any mistake will result in the site not being located.

In many countries, English is not a native tongue. Meaningful WWW addresses in such countries are typically created by transliterating the name of the site owner into Latin letters. Unfortunately, many languages do not have an accepted and widely known standard of

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transliteration. Thus, there may be several plausible transliterations for a single name, resulting in several possible meaningful addresses, only one of which is correct.

Another problem is that the current address name scheme is not user friendly. First, in countries in which most people are not English speaking, the use of Latin letters and/or English spelling conventions may be a burden to many users, especially non-experienced users. In addition, in many cases there is no direct relationship between the name of the site owner and the address of his site. Guessing the address is typically not an option. Further, in countries where the name is transliterated, even if a meaningful address is created (such as for IBM, above) there is still no guarantee that a casual user will correctly transliterate that name from his native language. In many cases, the site addresses can be used as mnemonics, i.e., once the address is known, its content makes it easy to remember. However, it is often impossible to reconstruct the correct address from the name of the site owner.

For these and other reasons, search engines and WWW directories have been developed, in which a user enters a name and/or other information regarding the site owner and a WWW page containing a list of possible site addresses is generated and presented to the user. Some search engines allow the entry of non-Latin characters. In addition, various automated agents and SearchBots have been developed which serve as online search agents and which interface directly with the browser, for example, the WebTurbo software. In some browsers, an incorrectly entered name will automatically pull up a search page.

Some Web browsers allow a user to maintain a local list of preferred locations, which are stored and accessed by selection of a nickname and/or a description from a list, rather than by entering a complete URL. In some browsers, an incompletely typed URL may be automatically expanded by the addition of a standard suffix or postfix. Another helpful feature is automatic completion of URLs. If a URL has been previously used, entering the first few characters thereof will cause the entire URL to be suggested to a user.

The underlying addressing system in the Internet is based on numeric strings. However, in order to provide some measure of comfort, textual addresses, as described above, are used. A DNS (Domain Name Server) is a distributed application that translates textual addresses into numeric addresses. If the address is incorrectly formatted or incorrectly entered, it does not generate a proper numeric address. Rather it returns an output which generates an error message at the requester. The different DNS servers update each other with new mappings of textual addresses to numeric addresses.

Many network systems supply aliasing support and/or "hosts" files that contain associations between numeric strings and textual strings. In some systems, for example

Microsoft Windows 95 with Hebrew Support, it is possible to enter and use (on the network, not on an external DNS) a host name including non-Latin characters. It should be noted that host names are also limited, for example, they cannot contain spaces.

5 M. Duerst, in WWW document "<http://www.w3.org/international/draft-duerst-dns-i18n-00.txt>" (a working draft), suggests introducing a new zero-level domain to allow the use of arbitrary characters from the Universal Character Set (ISO 10646), also known as Unicode, in domain names. Duerst suggests an implementation in which software with an internationalized user interface, such as a web browser will be responsible for conversions. The software would analyze the domain name, call the (DNS) resolver directly if the domain
10 name conforms to the domain name syntax restrictions and otherwise encode the name according to the specifications described in the document. Duerst also suggests providing a separate look up service that programs will call if a domain name contains characters outside the allowed range. Francois Yergeau, in WWW document "<http://www.alis.com:8085/~yergeau/url-00.html>", suggests an 8-bit encoding for the Unicode,
15 called UTF-8 (UCS Transformation Format 8), which preserves the full US-ASCII range, so that it is compatible with file systems, parsers and other software which relay on US-ASCII values but are transparent to other (8-bit) values.

SUMMARY OF THE INVENTION

It is an object of some embodiments of the present invention, to allow a user to retrieve
20 a WWW page using a native language, other than English and optionally using non-Latin characters, such as Cyrillic, Hebrew and Arabic.

It is an object of some preferred embodiments of the invention to allow flexible naming of Domains and URLs, preferably using non-Latin characters. Preferably, the length is not substantially limited in length.

25 It is an object of some preferred embodiments of the invention to allow a user to enter partial information regarding a site owner, preferably without imposing an order on the information. Preferably, such information directly retrieves a home page, which belongs to a site matching the entered information.

It is an object of some preferred embodiments of the invention, to allow a user to
30 directly access WWW pages, without requiring the user to recall long and/or obtuse URLs and/or without requiring the user to make selections and/or perform any additional procedure beyond what would have been required if the user had in fact typed the URL.

It is an object of some preferred embodiments of the invention to allow a user to surf the WWW using his native language, preferably, without requiring changes in existing hardware/software products.

In accordance with a preferred embodiment of the invention, a user enters a native language alias and/or name for a site owner and that input is converted into a numeric string address, so that data stored at the site can be retrieved. Preferably, the user enters the input into a standard portion of a browser, a location entry window, just as a standard URL would be entered. In accordance with one preferred embodiment of the invention, the input is converted by a DNS server. Preferably the DNS server directly translates the input to a numeric string. Alternatively, the DNS translates the input to a corresponding standard URL, which is then translated into a numeric string.

Alternatively, the input is translated into a standard URL by a local program which then transfers the URL to the browser. Alternatively, the browser passes the input to a program that performs the translation and transmits the generated URL to the Internet. Alternatively, a proxy server translates the input either to a numeric string or to a corresponding standard URL. Alternatively, a name server masquerades as a DNS server and converts non-standard names into standard names and/or IP addresses. Standard names are preferably passed to a standard DNS server.

In accordance with a preferred embodiment of the invention, there is provided a database which associates URLs and/or domain names with native language information and/or nicknames indicative of the site owners. Thus, a user can enter information which is associated with the site owner, rather than a proper name or a transliteration thereof. In some preferred embodiments of the invention, a translator, when determining a mapping between a native language input and a standard URL, consults the database. Preferably, the translation is performed as a service and/or as a proxy service. Preferably, the database is maintained at a single location, external to the machine that requires the translation. Alternatively, there is more than one site at which the database or a portion thereof, is maintained. Alternatively, the database resides on the same machine as the translator. Thus, in some cases, distributed databases need to be kept up to date.

In a preferred embodiment of the invention, periodic updates are sent to all the machines and are automatically assimilated in a local copy of a database. Preferably, the update comprises only changes. Alternatively, the entire database is transferred as a replacement file. In accordance with a preferred embodiment of the invention, the local database operates as a cache, so that fewer "external" queries are required. Preferably, when

attempting to match partial information with site related information, previously and/or recently used URLs are selected over unused URLs with a similar matching. It should be noted in this context, that as a result of the explosive growth of the Internet in the last few years, the event of a new domain name/URL address being added is more common than the event of an address being changed or deleted.

There is therefore provided in accordance with a preferred embodiment of the invention, a method of WWW page retrieval from a web site, comprising:

entering information associated with the site, which information is not a WWW address or a portion thereof; and

directly displaying said page, using a browser, without any additional user intervention, beyond said entering,

wherein said information is in a non-Latin language.

There is also provided in accordance with a preferred embodiment of the invention, a method of WWW page retrieval from a web site, comprising:

entering information associated with the site, which information is not a WWW address or a portion thereof; and

directly displaying said page, using a browser, without any additional user intervention, beyond said entering,

wherein directly displaying comprises analyzing said information using user-dependent information.

There is also provided in accordance with a preferred embodiment of the invention, a method of WWW page retrieval from a web site, comprising:

entering information associated with the site, which information is not a WWW address or a portion thereof; and

directly displaying said page, using a browser, without any additional user intervention, beyond said entering,

wherein said information is entered into a URL entry field in said browser.

There is also provided in accordance with a preferred embodiment of the invention, a method of WWW page retrieval from a web site, comprising:

entering information associated with the site, which information is not a WWW address or a portion thereof; and

directly displaying said page, using a browser, without any additional user intervention, beyond said entering,

wherein said page is selected responsive to a geographical location at which said information is entered.

In a preferred embodiment of the invention, said information is in a non-Latin language.

5 In a preferred embodiment of the invention, said information does not meet domain name specifications. Alternatively or additionally, said information does not meet URL specifications. Alternatively or additionally, said information comprises a plurality of words. Alternatively or additionally, said information comprises a field identifier and a field-match value. Alternatively or additionally, said information is associated with an owner of the site.
10 Alternatively or additionally, said information comprises a partial street address of said owner. Alternatively or additionally, said information comprises a telephone number of said owner.

In a preferred embodiment of the invention, the method comprises analyzing said partial information to determine a single translation thereof. Preferably, analyzing comprises correcting spelling in said information. Preferably, correcting spelling comprises correcting for
15 at least one transliteration error.

In a preferred embodiment of the invention, analyzing comprises applying natural language recognition on said information. Alternatively or additionally, analyzing comprises blocking access to certain types of sites. Alternatively or additionally, said translation comprises a only domain name. Preferably, said translation comprises a URL. Alternatively or
20 additionally, said association is determined using a database of associations.

Preferably, said database is at least logically associated with a particular user. Preferably, said database includes information regarding a particular user, which information is entered by said user, which page is selected for display responsive to said information and wherein said database is stored at a location remote from where the information is entered for
25 display of said page.

Alternatively or additionally, said database comprises at least one association which is particular to said particular user. Preferably, analyzing comprises analyzing responsive to said at least one association. Alternatively or additionally, said at least one association is entered by said particular user. Alternatively or additionally, said at least one association is automatically
30 generated responsive to a selection of a WWW page, from a plurality of suggested pages, by said particular user.

In a preferred embodiment of the invention, at least one association in said database is automatically generated responsive to a selection of a particular WWW page, from a plurality of suggested pages, by a plurality of users.

In a preferred embodiment of the invention, said database is at least logically associated with a translation server, which utilizes said database for translation.

In a preferred embodiment of the invention, said at least logical association comprises a physical association.

5 In a preferred embodiment of the invention, said analyzing is performed locally, where said page is displayed. Alternatively or additionally, said analyzing is performed remotely from where said page is displayed. Alternatively or additionally, said analyzing comprises determining a one-to-one mapping between said information and a translation. Alternatively or additionally, said analyzing utilizes a geographical location at which said information is
10 entered.

In a preferred embodiment of the invention, said information is entered by a user in a same way in which a standard URL would be entered. Alternatively or additionally, said information is entered into a window overlaying said browser. Preferably, said window is overlaying a location window of said browser.

15 In a preferred embodiment of the invention, said information is entered in a language not supported by said browser. Alternatively or additionally, said information is entered in a font not supported by said browser. Alternatively or additionally, directly displaying said page, comprises automatically providing password information for accessing said page. Preferably, a plurality of such passwords are stored in a password database associated with said user.

20 There is also provided in accordance with a preferred embodiment of the invention, a server comprising:

- a database associating business information with WWW sites;
 - a translator which converts an input comprising business information into a WWW site address, using said database; and
 - 25 a user information database,
- wherein said translator utilizes said user information database for the conversion.

Preferably, said user database comprises a user's previous desired conversions. Alternatively or additionally, said user database comprises a user's geographical location.

30 There is also provided in accordance with a preferred embodiment of the invention, a system including a server as described above and a client which provides said input to said server and displays a WWW page indicated by said address.

There is also provided in accordance with a preferred embodiment of the invention, a server comprising:

a database associating information with WWW sites;
a user information database; and
a translator which converts input information provided to it, into a WWW site address,
using said database and said user database.

5 Preferably, said input information comprises business information. Alternatively or additionally, said input information comprises domain name information. Alternatively or additionally, said input information comprises URL information.

There is also provided in accordance with a preferred embodiment of the invention, a software unit for integrating with an existing browser, comprising:

10 a first module adapted to be integrated with said browser and which adds at least one functionality to a user interface of said browser; and

a second module which communicates with a remote site having stored therein information,

wherein said second module uses said communication to retrieve at least some of said
15 information to perform said added functionality.

Preferably, said functionality comprises sending an e-mail to an owner of a site and wherein said information comprises an association between a site and an e-mail address of the owner thereof. Alternatively or additionally, said functionality comprises a poll answering interface and wherein said information comprises at least one poll question to display.

20 Alternatively or additionally, said functionality comprises translating partial information into WWW addresses and wherein said information comprises an association between partial information and WWW addresses.

In a preferred embodiment of the invention, the unit comprises a third module which updates said information responsive to input entered at said browser. Alternatively or
25 additionally, said remote site performs an operation requested by said functionality, responsive to said user information database. Preferably, said remote site performs a matching between partial entered information and a business information database, responsive to information associated with a user of said browser. Alternatively or additionally, said remote site sends credit card information to a second remote site, responsive to said functionality and to said
30 information associated with a user of said browser.

In a preferred embodiment of the invention, said functionality does not affect a visual format of a GUI (Graphical User Interface) of said browser, when said functionality is not in use. Alternatively, said functionality does not affect a visual format of a GUI (Graphical User Interface) of said browser, when said functionality is in use.

There is also provided in accordance with a preferred embodiment of the invention, a software unit comprising:

a first module which receives, from a browser, a WWW address which does not meet WWW addressing standards;

5 a second module which translates said address into a WWW address which meets WWW addressing standards; and

a third module which instructs said browser to display a page associated with said translated WWW address.

Preferably, said second module performs said translation using a remote translation
10 service. Alternatively or additionally, said first module impersonates a TCP/IP stack. Alternatively or additionally, said first module impersonates a HTTP service handler. Alternatively or additionally, said first module impersonates a DNS server. Alternatively or additionally, said first module steals a user input from said browser. Alternatively or additionally, said third module utilizes an OLE/DDE service. Alternatively or additionally,
15 said translated address comprises a complete URL. Alternatively or additionally, said unit comprises an upload module which provides site accessing information to uploaded to a remote computer. Alternatively or additionally, said unit comprises a page generation module which generates a WWW page in response to said non-standard WWW address. Preferably, said generated WWW page comprises a list of possible WWW pages.

20 Alternatively or additionally, said generated page comprises a directory of a plurality of pages in a particular site. Alternatively or additionally, said generated page comprises at least one advertisement. Alternatively or additionally, said generated page displays a request for more information. Alternatively or additionally, said generated page is generated locally, in response to a request for a remote WWW address.

25 In a preferred embodiment of the invention, said unit comprises a messaging module which displays a message responsive to non-availability of a required WWW page. Alternatively or additionally, said unit comprises an e-mail module which corrects e-mail addresses, responsive to information associated with e-mail addressees.

In a preferred embodiment of the invention, said unit is a separately compiled software.

30 There is also provided in accordance with a preferred embodiment of the invention, a computer readable medium having encoded thereon a representation of a software unit as described above.

There is also provided in accordance with a preferred embodiment of the invention, a method of WWW page retrieval from a web site, comprising:

entering information associated with the site;
spell correcting said information; and
displaying a page responsive to said information, using a browser.

Preferably, spell correcting comprises correcting transliteration errors. Preferably, said
5 information comprises a URL.

There is also provided in accordance with a preferred embodiment of the invention, a
method of accessing an Internet resource, comprising:

entering information, which information does not comprise even a partial address for
said resource; and

10 accessing said resource responsive to said information, without any additional user
intervention, beyond said entering,

wherein said resource comprises a news group.

There is also provided in accordance with a preferred embodiment of the invention, a
method of e-mail addressing, comprising:

15 entering an incorrect e-mail address, which does not form an alias, a portion or a
nickname of a valid e-mail address;

automatically correcting said address, using information at a first, remote, location; and

sending an e-mail message to a second remote location, via an Internet, using said
corrected address.

20 Preferably, said incorrect e-mail address comprises information associated with a
desired e-mail addressee. Preferably, said information comprises at least a portion of a
geographical address. Alternatively or additionally, said information comprises at least a
portion of a telephone number.

BRIEF DESCRIPTION OF THE DRAWINGS

25 The present invention will be more clearly understood from the following detailed
description of the preferred embodiments of the invention and from the attached drawings, in
which:

Fig. 1 is a schematic block diagram of a site translator configuration, in accordance
with a preferred embodiment of the invention;

30 Fig. 2 is a schematic block diagram of a site translator configuration, in accordance
with another preferred embodiment of the invention;

Fig. 3 is a schematic block diagram of a site translator configuration, in accordance
with another preferred embodiment of the invention;

Fig. 4 is a schematic block diagram of a site translator configuration, including a data server, in accordance with another preferred embodiment of the invention;

Fig. 5 is a schematic block diagram of a site translator configuration, including a domain name server, in accordance with another preferred embodiment of the invention;

5 Fig. 6 is a flowchart of a method of obtaining a WWW page, in accordance with a preferred embodiment of the invention; and

Fig. 7 is a schematic block diagram of a configuration including a client, a data server and a remote site, in accordance with a preferred embodiment of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

10 One aspect of the present invention relates to a method of enabling a user to enter a substantially free-form designation of a WWW site, preferably in the user's native language, and directly obtain the information from the site, without the necessity of using a search engine and/or an exact site address.

15 Figs. 1-5 are schematic block diagrams of several methods of configuring a system in accordance with this aspect of the present invention. Fig. 6 is a flowchart of a method of obtaining a WWW page, in accordance with a preferred embodiment of the invention. A user enters the information by which he wishes to obtain a WWW page (60). This information is preferably matched to a database (62), as a result of which an IP address is generated (64). The page is then obtained automatically using the IP address and is preferably displayed on the
20 user's computer (66). The various configurations of Figs. 1-5, determine how and by what hardware each of these steps is performed.

In Fig. 1, a system 11 includes a browser 10, at which a user enters his request, a translator 12 which aids in converting this request into an IP address and a remote site 14, which hosts a desired WWW page. In a preferred embodiment of the invention, the translator
25 masquerades as a TCP/IP stack (preferably Winsock in Windows 95). Alternatively, the translator is a proxy for the client machine. Such a proxy may be connected by a local network to the client machine and/or may be at the user's ISP (Internet Service Provider) and/or may be a remote machine, anywhere on the Internet. It should be noted that, in some preferred
30 embodiments of the invention, all communications, in both directions, pass through the translator. Alternatively, only outgoing communications from the browser will go through the translator.

In Fig. 2, a system 21 includes a translator 22 which is in direct communication with a browser 20 and a remote site 24 which is in direct communication with browser 20. In this embodiment of the invention, browser 20 communicates with a local translator, which

converts free-form entered domain name addressing into standard URLs. In accordance with one preferred embodiment of the invention, the translator is integrated as a module of the browser. Alternatively or additionally, the connection to the translator is patched into the browser. Alternatively or additionally, the translator communicates with the browser through
5 existing hooks in the browser, such as the OLE/DDE protocol, under the Windows operating system. In a preferred embodiment of the invention, the browser contacts the translator if the entered address does not match certain criteria, such as form and character set.

In a preferred embodiment of the invention, the translator uses a local translation database. Preferably, this database is updated by an external server, either automatically, or by
10 a user request. In a preferred embodiment of the invention, a user may enter a personal preference for an association between a URL/domain name and partial and/or native language information. In one preferred embodiment of the invention, the local database comprises host alias files. In one preferred embodiment of the invention, one or more of these files are replaced by updated files. Alternatively, the translator preferably includes an automatic
15 application that downloads updates from a central server and updates the local files.

Fig. 3 illustrates a system 31, in which a translator 32 acts as a front end to a browser 30, which downloads Web pages from a remote site 34. In accordance with one preferred embodiment of the invention, translator 32 includes a separate input window, which is preferably overlaid on a portion of the browser window. Preferably, this separate window
20 remains on top on the browser and at a fixed relationship to at least one feature of the browser display. In a preferred embodiment of the invention, this window provides font support and data entry support for non-Latin character sets, even if the underlying browser and/or operating system do not. Preferably, such support includes support for languages which are not entered as single characters from the left to the right, for example Hebrew and Arabic, which are
25 entered right to left and Chinese pictograms, which are composed. Alternatively or additionally, translator 32 is hidden from the user, so that it appears to the user that he is working with and entering information directly into the browser. In one preferred embodiment of the invention, a transparent window is overlaid on the browser address entry window. Alternatively or additionally, the translator steals the keystrokes from the browser, preferably
30 by changing the window focus through the operating system. In a preferred embodiment of the invention, the translator sends the keystrokes to the browser, so that they are displayed, but performs a translation of the keystrokes and instructs the browser to use the addressed obtained by translation and ignore what was typed. Alternatively, the translator only steals the "return" key and at that key, reads the location entered into the browser location window and performs

the translation. In a preferred embodiment of the invention, the translator displays the translated URL and/or IP address. Preferably, this information is displayed in the browser location window. Alternatively, it is displayed in a status area associated with the browser and/or with the translator. In a preferred embodiment of the invention, both the original and the translated addresses are displayed side by side, for the user to learn.

Fig. 4 illustrates a connection between a translator 42 and a data server 46, in accordance with a preferred embodiment of the invention. In many of the above-described embodiments, translator 42 need not actually perform the translation itself. Rather, the input entered by the client is transmitted by translator 42 to a data server 46, which preferably performs the translation. Data server 46 returns a URL and/or an IP address to translator 42, which can then obtain data, either directly or through the browser, from a remote site 44.

Fig. 5 illustrates the integration of a translator 52 with a domain name server 58, in accordance with a preferred embodiment of the invention. When a browser 50 desires to connect to a remote site 54, the browser (or an installed TCP/IP stack) sends the domain name to DNS server 58, to be translated into an IP address. In accordance with one preferred embodiment of the invention, DNS server 58 utilizes a translator 52 to perform address translation for domain names that do not meet certain criteria. Such a translator may be local to the name server, such as on a local network or may be a remote service, accessed through a dedicated line or through the Internet. Alternatively, the DNS may be modified to perform the translation, preferably using look-up tables, but possibly using a pattern matching system. In a preferred embodiment of the invention, a plurality of translators are arranged in a hierarchical manner, similar to domain name servers, so that if a name is not found on one translator, other translators are queried. Preferably, this hierarchical structure utilizes the configuration and protocols used for existing domain name servers.

In an alternative embodiment of the invention, addresses to be resolved are passed first or only to the translator. In one preferred embodiment of the invention, the translator acts as a DNS. Preferably, the translator is registered as a primary DNS. Preferably, the translator translates only non-standard domain names, and passes standard domain names to the DNS. Alternatively or additionally, the translator acts as a filter, which converts non-standard domain names and/or free-form information into standard domain names, which are then passed to the DNS to be converted into IP addresses. In one preferred embodiment of the invention, the translator is in the gateway to a DNS server local network.

In a preferred embodiment of the invention, where the non-standard URL must pass through standard components, the non-standard URL is preferably encoded so that it is not

modified by such components, for example, by encoding the non-ASCII characters and/or by replacing empty spaces with fill characters. One example of a standard component is a browser, which may attempt to parse the input, instead of simply sending it to the DNS. Encoding may be required in order to avoid error detection and address completion mechanisms which may be implemented in a particular browser. Such encoding is preferably performed using a front end, such as described above and/or a patch to the browser.

In a preferred embodiment of the invention, the translator is used to convert the entire URL, not just the domain name, into a proper address. In some cases, a native language expression will map to a particular page at a remote site, the address of which the translator will be required to return to the browser. In a preferred embodiment of the invention, the DNS protocol is modified to allow the transmission of the entire address. Alternatively, a separate connection is opened between a translator portion resident at the browser and a translator portion resident at the DNS, through which connection such information is passed. Alternatively, two translators are used, one for the domain name portion and one for the rest of the URL. Preferably, both translators are provided with the same native language and/or free-form expression and one returns the IP address and one returns the rest of the URL. Preferably, these two translators are synchronized so that they provide a single complete URL. In a preferred embodiment of the invention where a proxy server is used, the proxy server can be used to split the URL and track its parts. Preferably, the proxy server provides a dummy IP address to the browser, when it is presented with a free form and/or native language expression and/or domain name by the browser. When that dummy address is detected by the proxy server, it may be replaced with the correct IP address and the correct other portions of the URL.

In a preferred embodiment of the invention, when a proper URL is passed to the translator, the translator returns it unchanged and/or passes it to a DNS to be translated. Alternatively, the address may be used as a key-word which is used by a user to indicate a site within a domain, for example, "www.microsoft.com software download".

In accordance with a preferred embodiment of the invention, the translator may perform one or more of the following functions:

(a) Correct spelling errors, especially those caused by transliteration errors. As a result, many near misses in site address entry will connect to the correct site.

(b) Accept words in any order. Preferably, these words are used to search a database in which each word and/or pattern is associated with a particular remote site.

(c) Find a site based on an (street/ P.O. Box/ e-mail) address of the site owner, and/or his telephone or fax numbers and/or a product, service name and/or trademark owned by the site owner and/or any particular information associated directly or indirectly with the site owner/operator. In a preferred embodiment of the invention, the (user's) focus is on the site itself and not on its owner. Thus, the information will be associated with the type/content/usage and/or information found in the site. In one example, the user may enter "freeware and software download center in Oakland" and the translator will locate a particular site and display it.

(d) Use field matching, for example "name=ibm".

(e) Request additional information.

(f) Generate a page with a list of possible WWW pages. Preferably, such a page will include only sites which are registered with a particular translation service. Preferably, the site owners will also register a graphical representation by which they wish to be displayed on the generated page. Such a page may also include advertisements. It should be appreciated that such a page may be generated locally, as a result of a local search, without actually sending any information out to the Internet. Thus, the page generation and display may be very rapid. In a preferred embodiment of the invention, the user will try out several of the sites and then indicate to the translator which site was the "correct" one. Thereafter, upon entering the same partial information, the site will be directly connected to. Alternatively or additionally, this selection will be used to generate a user profile and/or to aid in matching partial information with other sites. Preferably, the translator uploads these selections to the data server.

(g) Learn a user's particular associations. In a preferred embodiment of the invention, a local database is maintained in which each partial entry by a user is associated with the actual site that the user connected to. Thereafter, when the user enters the partial information, the site can be connected to without any additional input by the user. Alternatively, every such choice is registered with a remote translator, which, when it receives partial information, performs indexing responsive to the identity of the remote user. In a preferred embodiment of the invention, each user on a particular machine can set up a profile of partial information matching. Preferably, a user can actively register certain associations.

(h) Perform a matching operation based on the geographical location of the user. For example, entering "Pizza store" will generate a different web site connection, based on where the connection is from. For example, a user in Brighton, MA will be directed to a different pizza store from a user in downtown Boston, even if both stores belong to the same franchise. Preferably, a user enters his computer's location, during configuration and/or at the beginning

of the session, so that the client computer transmits its location to the translator. Preferably, a resident portion of the translator performs this transmission. Alternatively to a geographical location, a logical location may be used. Alternatively or additionally, sites are located based on them being associated with a user profile. In a preferred embodiment of the invention, a user profile is defined based on the user belonging to a certain customer club. Alternatively or additionally, the profile may be generated responsive to his age and/or previous browsing habits.

(i) Perform an automatic web search and return the address of a single hit.

(j) Provide an alternative page in cases where a page cannot be found. Preferably, when such an alternative page is provided, the user is informed, either by the browser or by a special pop-up message window generated by a resident portion of the translator.

(k) Parse a natural language query, for example "get me a pizza store". Alternatively or additionally, a command language can be used, for example, SQL.

(l) Translate only a domain name and provide in response a list of the sites that are registered under that domain name. For example, entering "Microsoft Inc." could generate a list of sites in the domain "microsoft.com", which are registered with the translation service.

In a preferred embodiment of the invention, each native language name and/or index word is associated with a plurality of sites. For example, many sites will be associated with "pizza". However, a particular site is designated the default site, for use if there isn't enough information available to otherwise uniquely select a single site.

In accordance with one preferred embodiment of the invention, the translator or a portion thereof is embodied as an external box, which may be connected on a telephone line between a computer with a modem and a remote computer. Alternatively, it is integrated into the operating system of the user's computer.

In a preferred embodiment of the invention, the translator is embodied as a distributed system. In one example, the matching an/or parsing is performed at one location, possibly the user machine, while the address translation is performed at a remote machine.

In a preferred embodiment of the invention, a resident portion of the translator is activated whenever the browser is started. In a preferred embodiment of the invention, the resident translator can communicate with external sites for many purposes including, automatic version update of the translator and/or indexes and/or tables; uploading client related information, such as use statistics and site access statistics; download advertising material to be displayed at various times; and resolve problems using an external service.

In a preferred embodiment of the invention, the local translator portion provides language support for native language address entry, even if the browser and/or operating system do not.

Fig. 7 is a schematic block diagram of a configuration including a client 70, a data server 72 and a remote site 74, in accordance with a preferred embodiment of the invention. A resident translator portion at client 70 preferably maintains the connection with data server 72. In one preferred embodiment of the invention, data server 72 transmits advertisements to the client. Alternatively or additionally, data server 72 transmits polls (for user response) to client 70. Preferably, server 72 receives the responses to the polls directly through the translator and not through a remote site. Alternatively, the polls are displayed in the browser as WWW pages, rather than as separate windows.

In accordance with another preferred embodiment of the invention, data server 72 can be used as an intermediate between client 70 and remote site 74, for the transfer of money. In a typical situation, if client 70 desires to make a purchase at remote site 74, he will be required to transmit credit card details over an insecure link (the Internet). Preferably, client 70 performs the purchase through data server 72, to which the credit card details have been previously downloaded and/or transmitted using a secure channel. The client transmits a product number and a remote site address to the data server and the data server performs the money transfer, preferably using a secure connection, but possibly using other means, for example, through a bank and/or a fax machine. Preferably, data server 72 verifies the identity of client 70, using a portion of the translator resident at client 70. In a preferred embodiment of the invention, the purchase is performed mostly automatically, by a user indicating to the resident portion of the translator, which product he wishes to purchase, preferably using a pointing device.

In a preferred embodiment of the invention, the translator adds icons and/or menus to the browser and/or overlays them on the browser window. Thus, functionality may be added to the browser. Additionally or alternatively to adding a button for purchasing, other buttons may be added, including, for example for sending e-mail to a site owner. Such additional functionalities preferably utilize information stored in the database, for example, the e-mail address of the site owner.

In a preferred embodiment of the invention, especially where the translator acts as a proxy server, the translator may be used to exercise parental control over the use of the client computer, for example to limit access to pornographic sites and/or money-spending sites. Preferably, the translator does not allow certain addresses to be translated. Preferably, each

client has associated therewith a list of allowed web sites, a list of proscribed web sites and/or a site rating, below which, access is allowed and above which, access is not allowed. The translator preferably includes or connects to a service that provides ratings for sites and/or domain names.

5 In a preferred embodiment of the invention, the translator performs password entry for sites that require a password. Instead of a user being required to recall a separate password and/or user name for each service to which he subscribes, when the user enters input associated with that site, the translator automatically enters the user name and/or password. Different nicknames may be associated with different users for the same page. Preferably, the
10 page with the password entry is also displayed to the user, but without requiring any input. Preferably, the passwords are maintained on the client machine, due to their sensitivity. Alternatively or additionally, a user is required to enter a single password in order to activate this feature.

In a preferred embodiment of the invention, the translator is embodied as a remote
15 translation service, with a local resident portion. Preferably, the remote portion is maintained as a network of hierarchical translation servers. In a preferred embodiment of the invention, the remote portion preferably includes a computer, a user information database, a site-owner information database, a search engine which searches the site-owner information data base, a HTTP server, a HTML generator and a client response portion, which controls the other
20 components of the server, responsive to input received from the client.

In a preferred embodiment of the invention, the client portion of the translator is embodied as a program that masquerades as a HTTP handler for the browser. Preferably, the translator registers itself as the HTTP handler. When the browser requests a page, the resident translator handles the translation, through the Internet and/or using a local database of
25 association, and then commands the browser, preferably through a DDE/OLE connection to obtain the particular page. Preferably, the local database includes user specific associations and/or is a cache of recently and/or commonly used addresses. Preferably, when a user requests a specific page, his local database is updated, preferably by a remote translator portion, to reflect an association between that particular choice and the information entered. In
30 some browsers, entry of a free-form URL will automatically cause a search-site to be connected to. Preferably, the resident portion of the translator captures such requests and performs a translation instead.

In some embodiments of the invention, words in the free-form input will be separated by a separator other than a blank, so that the browser does not cause problems with the existence of blanks in what is supposed to be a URL.

In a preferred embodiment of the invention, sites are manually registered with the translation service. A site-owner fills out a form, preferably on the Internet, and requests that the translator recognize a particular site. Preferably, the site owner suggests key words to be used in indexing. Alternatively, the owner of the translator enters this information. Alternatively, the translator automatically identifies domains and generates index terms for the domains. Preferably, the site-owner database is update able by the site owners, to add indexing terms. Alternatively, if a large number of users indicate that they identify a particular site with particular index terms and/or keywords, this information is preferably entered into the site-owner database. A preferred way of making such an indication is by accumulating the choices made by users that entered partial information and received a list of possible sites. The site which is most often chosen for a particular group of key words is preferably made the default choice (preferably, providing that the user does not have a personal selection).

In a preferred embodiment of the invention, users may also register by filing out an automated form.

It should be appreciated that the present invention has been described mostly with relation to Web browsers. However, in other preferred embodiments of the invention, the methods and apparatus described herein may be applied to other types of Internet applications, which require domain name resolution, such as News services and FTP services. In addition, these methods may be applied to translating domain name portions of e-mail addresses. However, in e-mail name translation, the aspect of directly accessing data of some embodiments of the invention, may not apply. Additionally, although some software elements are described herein as including a plurality of modules, it should be appreciated that these modules may be merged and/or sub-divided into modules, in some embodiments of the present invention.

It should be appreciated that the above described methods of address manipulation, as described hereinabove contain many features, not all of which need be practiced in all embodiments of the invention. Rather, various embodiments of the invention will utilize only some of the above described techniques, features or methods and or combinations thereof. In addition, although the above description is focused on methods, apparatus for performing these methods is also considered to be within the scope of the invention.

It will be appreciated by a person skilled in the art that the present invention is not limited by what has thus far been described. Rather, the present invention is limited only by the claims which follow. When used in the following claims, the terms "comprises", "comprising", "includes", "including" or the like means "including but not limited to".

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ART 34 AMDT
092/00810 a02**CLAIMS**

1. A method of WWW page retrieval from a web site, comprising:
5 entering information associated with a content of the site, which information is not a WWW address or a portion thereof, which entering comprises typing by a user;
providing said information to a software not associated with said site;
providing a page address responsive to said entered information, by said software;
retrieving said page responsive to said page address; and
10 directly displaying said page, using a browser, without any additional user intervention, beyond said entering,
wherein said information is entered in a non-Latin language.
2. A method according to claim 1, comprising providing user-dependent information and
15 wherein providing a page address comprises analyzing said information using said user-dependent information.
3. A method according to any of the preceding claims, wherein providing a page address comprises selecting a URL from a translation table in which said information is a unique index.
20
4. A method according to any of claims 1-2, wherein said page address is determined using a database of associations.
5. A method according to claim 4, wherein said database is at least logically associated
25 with a particular user.
6. A method according to claim 5, wherein said database includes information regarding a particular user, which information is entered by said user, which page is selected for display responsive to said information and wherein said database is stored at a location remote from
30 where the information is entered for display of said page.
7. A method according to claim 4 or claim 5, wherein said database comprises at least one association which is particular to said particular user.

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8. A method according to claim 7, wherein analyzing comprises analyzing responsive to said at least one association.

5 9. A method according to any of claims 7-8, wherein said at least one association is entered by said particular user.

10 10. A method according to any of claims 7-9, wherein said at least one association is automatically generated responsive to a selection of a WWW page, from a plurality of suggested pages, by said particular user.

11. A method according to claim 7, wherein at least one association in said database is automatically generated responsive to a selection of a particular WWW page, from a plurality of suggested pages, by a plurality of users.

15 12. A method according to claim 4 or claim 5, wherein said database is at least logically associated with a translation server, which utilizes said database for translation.

13. A method according to any of claims 5-12, wherein said at least logical association comprises a physical association.

20 14. A method of WWW page retrieval from a web site, comprising:
entering information associated with the content of the site, which information is not a
WWW address or a portion thereof, which entering comprises typing by a user;
providing said information to a software not associated with said site;
25 analyzing said information using user-dependent information;
providing a page address responsive to said entered information and said analysis, by
said software;

retrieving said page responsive to said page address; and

30 directly displaying said page, using a browser, without any additional user intervention,
beyond said entering

15. A method according to any of the preceding claims, wherein providing comprises providing responsive to a geographical location at which said information is entered.

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16. A method of WWW page retrieval from a web site, comprising:
entering information associated with the content of the site, which information is not a
WWW address or a portion thereof, which entering comprises typing by a user;
providing said information to a software not associated with said site;
5 analyzing said information responsive to a geographical location at which said
information is entered;
providing a page address responsive to said entered information and said analysis, by
said software;
retrieving said page responsive to said page address; and
10 directly displaying said page, using a browser, without any additional user intervention,
beyond said entering.

17. A method according to any of the preceding claims, wherein said information is entered
by a user in a same way in which a standard URL would be entered.

18. A method according to claim 17, wherein said information is entered into a URL entry
field in said browser.

19. A method according to claim 1-16, wherein said information is entered into a window
overlaying said browser.

20. A method according to claim 19, wherein said window is overlaying a location window
of said browser.

21. A method of WWW page retrieval from a web site, comprising:
entering information associated with the content of the site, which information is not a
WWW address or a portion thereof, which entering comprises typing by a user;
providing said information to a software not associated with said site;
providing a page address responsive to said entered information, by said software;
30 retrieving said page responsive to said page address; and
directly displaying said page, using a browser, without any additional user intervention,
beyond said entering,
wherein said information is entered into a URL entry field in said browser.

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22. A method according to any of claims 14, 16 or 21, wherein said information is in a non-Latin language.

23. A method according to any of claims 1-22, wherein said information does not meet
5 domain name specifications.

24. A method according to any of claims 1-23, wherein said information does not meet URL specifications.

10 25. A method according to any of claims 1-24, wherein said information comprises a plurality of words.

26. A method according to any of claims 1-24, wherein said information comprises a field identifier and a field-match value.

15 27. A method according to any of claims 1-24, wherein said information is associated with an owner of the site.

20 28. A method according to claim 27, wherein said information comprises a partial street address of said owner.

29. A method according to claim 27, wherein said information comprises a telephone number of said owner.

25 30. A method according to any of the preceding claims, comprising analyzing said information to determine a single translation thereof.

31. A method according to claim 30, wherein analyzing comprises correcting spelling in said information.

30

32. A method according to claim 31, wherein correcting spelling comprises correcting for at least one transliteration error.

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34. A method according to any of claims 30-33, wherein analyzing comprises blocking access to certain types of sites.

36. A method according to claim 35, wherein said translation comprises a URL.

38. A method according to any of claims 30-13, wherein said analyzing is performed remotely from where said page is displayed.

39. A method according to any of claims 30-38, wherein said analyzing comprises determining a one-to-one mapping between said information and a translation.

40. A method according to any of the preceding claims, wherein said information is entered in a language not supported by said browser.

41. A method according to any of the preceding claims, wherein said information is entered in a font not supported by said browser.

42. A method according to any of the preceding claims, wherein directly displaying said page, comprises automatically providing password information for accessing said page.

43. A method according to claim 42, wherein a plurality of such passwords are stored in a password database associated with said user.

44. A server comprising:
a database associating business information with WWW sites;

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a translator which converts an input comprising business information into a WWW site address, using said database; and

a user information database,

wherein said translator utilizes said user information database for the conversion.

5

45. A method according to claim 44, wherein said user database comprises a user's previous desired conversions.

10

46. A method according to claim 44, wherein said user database comprises a user's geographical location.

47. A system including a server according to any of claims 44-46 and a client which provides said input to said server and displays a WWW page indicated by said address.

15

48. A server comprising:
a database associating information with WWW sites;
a user information database; and
a translator which converts input information provided to it, into a WWW site address, using said database and said user database.

20

49. A server according to claim 48, wherein said input information comprises business information.

25

50. A server according to claim 48, wherein said input information comprises domain name information.

51. A server according to claim 48, wherein said input information comprises URL information.

30

52. A software unit for integrating with an existing browser, comprising:
a first module adapted to be integrated with said browser and which adds at least one functionality to a user interface of said browser; and
a second module which communicates with a remote site having stored therein information,

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wherein said second module uses said communication to retrieve at least some of said information to perform said added functionality.

53. A unit according to claim 52, wherein said functionality comprises sending an e-mail to an owner of a site and wherein said information comprises an association between a site and an e-mail address of the owner thereof.

54. A unit according to claim 52, wherein said functionality comprises a poll answering interface and wherein said information comprises at least one poll question to display.

55. A unit according to claim 52, wherein said functionality comprises translating partial information into WWW addresses and wherein said information comprises an association between partial information and WWW addresses.

56. A unit according to any of claims 52-55, comprising a third module which updates said information responsive to input entered at said browser.

57. A unit according to any of claims 52-56, wherein said remote site performs an operation requested by said functionality, responsive to said user information database.

58. A unit according to claim 57, wherein said remote site performs a matching between partial entered information and a business information database, responsive to information associated with a user of said browser.

59. A unit according to claim 57, wherein said remote site sends credit card information to a second remote site, responsive to said functionality and to said information associated with a user of said browser.

60. A unit according to any of claims 52-59, wherein said functionality does not affect a visual format of a GUI (Graphical User Interface) of said browser, when said functionality is not in use.

61. A unit according to any of claims 52-59, wherein said functionality does not affect a visual format of a GUI (Graphical User Interface) of said browser, when said functionality is in use.

- 5 62. A software unit comprising:
a first module which receives, from a browser, a WWW address which does not meet WWW addressing standards;
a second module which translates said address into a WWW address which meets WWW addressing standards; and
10 a third module which instructs said browser to display a page associated with said translated WWW address.

63. A unit according to claim 62, wherein said second module performs said translation using a remote translation service.

15 64. A unit according to claim 62 or claim 63, wherein said first module impersonates a TCP/IP stack.

65. A unit according to claim 62 or claim 63, wherein said first module impersonates a
20 HTTP service handler.

66. A unit according to claim 62 or claim 63, wherein said first module impersonates a DNS server.

25 67. A unit according to claim 62 or claim 63, wherein said first module steals a user input from said browser.

68. A unit according to any of claims 62-67, wherein said third module utilizes an OLE/DDE service.

30 69. A unit according to any of claims 62-68, wherein said translated address comprises a complete URL.

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70. A unit according to any of claims 62-69, wherein said unit comprises an upload module which provides site accessing information to uploaded to a remote computer.

71. A unit according to any of claims 62-70, wherein said unit comprises a page generation module which generates a WWW page in response to said non-standard WWW address.

72. A unit according to claim 71, wherein said generated WWW page comprises a list of possible WWW pages.

73. A unit according to claim 71 or 72, wherein said generated page comprises a directory of a plurality of pages in a particular site.

74. A unit according to any of claims 71-73, wherein said generated page comprises at least one advertisement.

75. A unit according to any of claims 71-74, wherein said generated page displays a request for more information.

76. A unit according to any of claims 71-75, wherein said generated page is generated locally, in response to a request for a remote WWW address.

77. A unit according to any of claims 62-76, wherein said unit comprises a messaging module which displays a message responsive to non-availability of a required WWW page.

78. A unit according to any of claims 62-77, wherein said unit comprises an e-mail module which corrects e-mail addresses, responsive to information associated with e-mail addressees.

79. A unit according to any of claims 52-78, wherein said unit is a separately compiled software.

80. A computer readable medium having encoded thereon a representation of a software unit according to any of claims 52-79.

81. A method of WWW page retrieval from a web site, comprising:

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entering information associated with the site;
spell correcting said information; and
displaying a page responsive to said information, using a browser.

5 82. A method according to claim 81, wherein spell correcting comprises correcting transliteration errors.

83. A method according to claim 82, wherein said information comprises a URL.

10 84. A method of accessing an Internet resource, comprising:
entering information, which information does not comprise even a partial address for said resource; and

accessing said resource responsive to said information, without any additional user intervention, beyond said entering,

15 wherein said resource comprises a news group.

85. A method of e-mail addressing, comprising:
entering an incorrect e-mail address, which does not form an alias, a portion or a nickname of a valid e-mail address;

20 automatically correcting said address, using information at a first, remote, location; and
sending an e-mail message to a second remote location, via an Internet, using said corrected address.

25 86. A method according to claim 85, wherein said incorrect e-mail address comprises information associated with a desired e-mail addressee.

87. A method according to claim 86, wherein said information comprises at least a portion of a geographical address.

30 88. A method according to claim 86, wherein said information comprises at least a portion of a telephone number.

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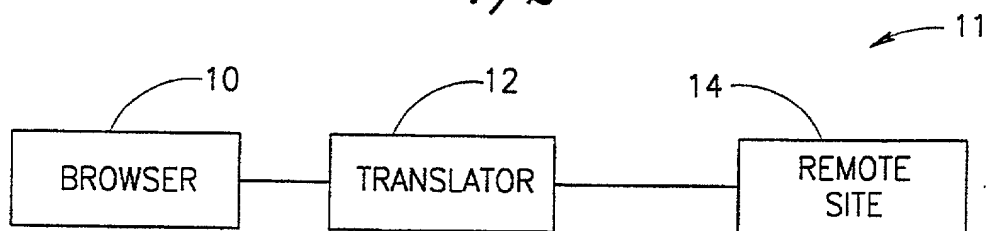


FIG. 1

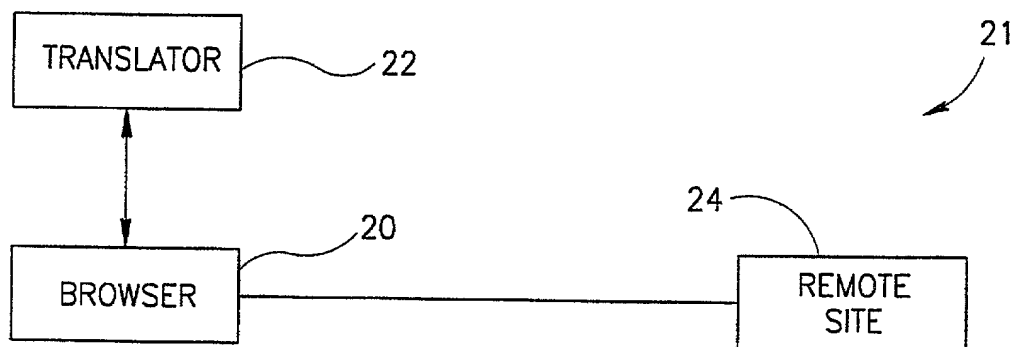


FIG. 2

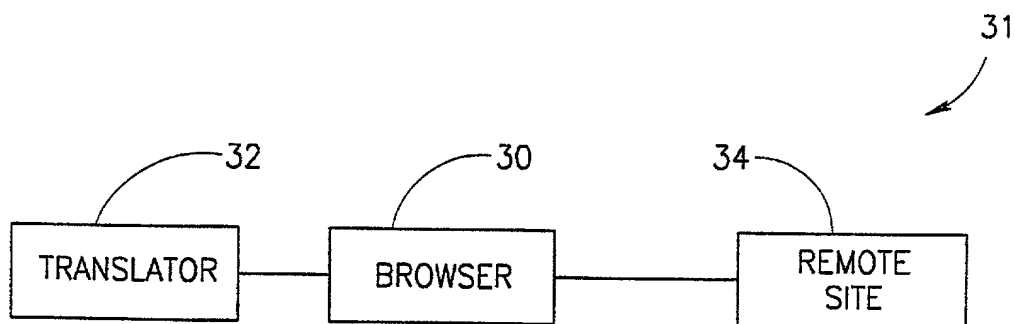


FIG. 3

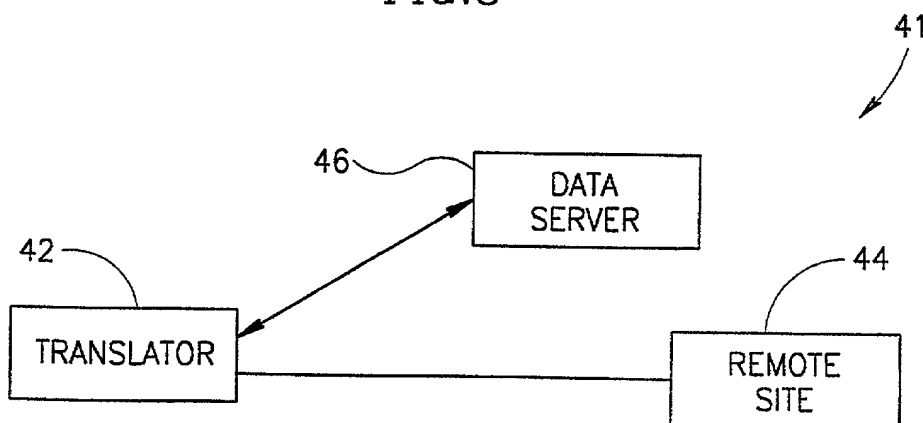


FIG. 4

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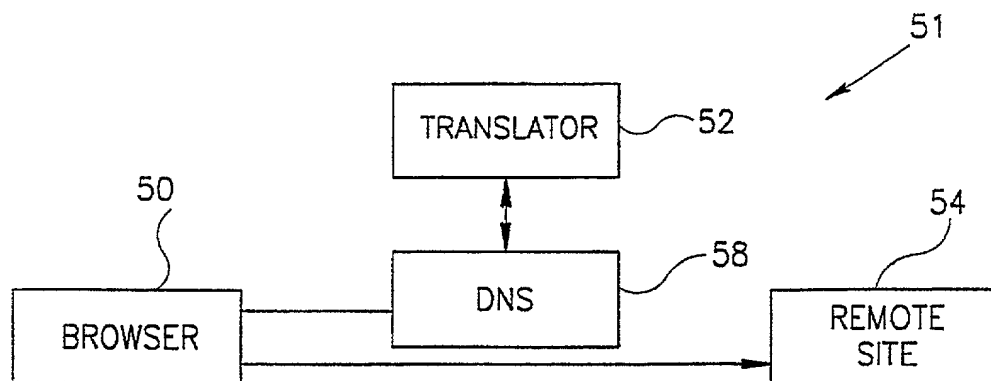


FIG. 5

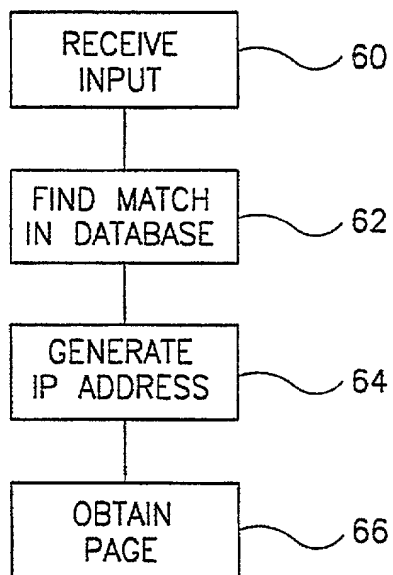


FIG. 6

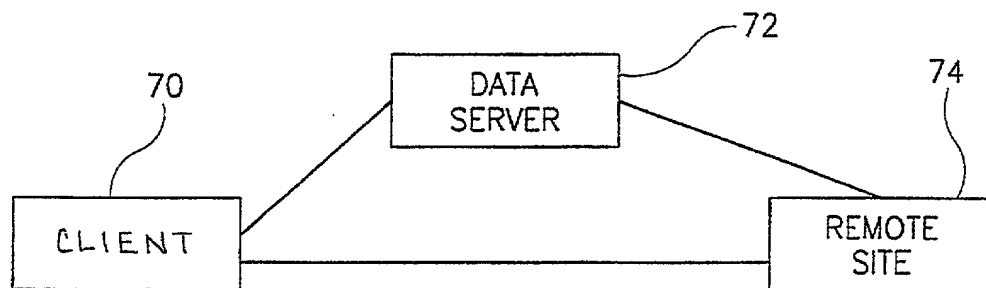


FIG. 7

Docket No.
193/01621

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

WWW ADDRESSING

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on January 28, 1999 as United States Application No. or PCT International Application Number PCT/IL99/00055 now USSN 09/529,792 and was amended on April 18, 2000

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Not Claimed
<u>123129</u>	<u>Israel</u>	<u>30 January 1998</u>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	
<u> </u>	<u> </u>	<u> </u>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	
<u> </u>	<u> </u>	<u> </u>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	

Docket No.
193/01621

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

WWW ADDRESSING

the specification of which

(check one)

☐ is attached hereto.

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Prior Foreign Application(s)

Priority Not Claimed

<u>123129</u>	<u>Israel</u>	<u>30 January 1998</u>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	
<u> </u>	<u> </u>	<u> </u>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	
<u> </u>	<u> </u>	<u> </u>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

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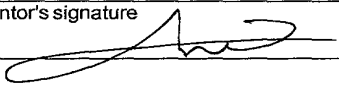
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Roby ROTH

Third inventor's signature

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Fourth inventor's signature

Date

Residence

Citizenship

Post Office Address

Full name of fifth inventor, if any

Fifth inventor's signature

Date

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Citizenship

Post Office Address

Full name of sixth inventor, if any

Sixth inventor's signature

Date

Residence

Citizenship

Post Office Address